

**Notice of Allowability**

Application No.

10/766,532

Examiner

Luis Roman

Applicant(s)

NAKAMURA, TSUNEHICO

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/05/07.
2. ☒ The allowed claim(s) is/are 1,5-7,12,15,18 and 21-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

***Reasons for Allowance***

Examiner acknowledges a submission of the amendment filled on 01/05/07. Claims 5-7 have been kept original, claims 1 & 7 have been amended, claims 12, 15 & 18 have been kept as previously presented and claims 2-4, 8-11, 13-14, 16-17 & 19-20 have been cancelled. New claims 21-24 were added. It also included remarks/arguments.

Amendments and arguments have overcome rejection

The following is an examiner's statement of reasons for allowance.

**Claims 1 & 21:** the closest references are:

- "Electrostatic Chuck Having Improved Gas Conduits" Weldon et al. US Patent 6108189 issued on August 2, 2000.
- "Multi-Zone Resistance Heater" Johnson et al. US Patent 6740853 issued on May 25, 2004.
- "Electrostatic Support Assembly Having An Integral Ion Focus Ring" Ross et al. US Patent 5986874 issued on November 16, 1999.
- "Substrate Support With Pressure Zones Having Reduced Contact Area And Temperature Feedback" Lue et al. US Patent 5761023 issued June 2, 1998.
- "Liquid Film Interface Cooling Chuck For Semiconductor Wafer Processing" del Puerto et al US Patent 5186238 issued February 16, 1993.

These patents disclose:

- Weldon et al. an electrostatic chuck (Fig. 2 element 100) comprising: a circular ceramic plate having an electrostatic attractive electrode (Fig. 2 element 110); a mounting surface (Fig. 2 element 105) for supporting a wafer formed on one of the main surfaces of the circular ceramic plate; an annular gas groove formed; on the periphery of the mounting surface in the form of concentric circles (Fig. 4a-b

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element 162) and an first gas inlet which communicates with the annular gas groove (Fig. 4a-b element 202); and a circular gas recess formed inside the circular ceramic plate (Fig. 4a-b element 115), and a second gas inlet which communicates with the circular gas recess (Fig. 4a-b inlet at the center of element 105).

- Johnson et al. teaches the usage of an annular groove (Fig. 10D element 440), a recess area (Fig. 10 D-E annular area between annular groove 440 and center 205) with an internal ribbing to separate them (Col. 8 lines 33-36).
- Ross et al. teaches the usage of dotted protrusions (Fig. 5-6 elements 48) and that it is to be understood that the actual distribution of the raised areas is subject to considerable variation within the scope of the invention (Col. 4 lines 43-48).
- Del Puerto et al. teaches a relation depth/width/pitch of 1/1.2/4 (Col. 4 lines 53-63). As a result by having a groove width of 1 mm the rib width would be 3.33 mm, which falls between 0.5-5 mm and 1-5 mm for the inner and outer rib respectively.
- Lue et al. teaches wherein the circular gas recess has a diameter, which is set to 70 to 95% of the outer diameter of the mounting surface (Fig. 3 area of element 74).

The patents do not disclose:

- Dotted protrusions in the annular grooves

Required by claims 1 & 21.

As a result for claims 1, 5-7, 12, 15, 18 & 21-24 the allowability resides, at least in part, in the above-described limitations, in combination with the other elements of each of the claims, which has not been disclosed in or rendered obvious by the Prior Art.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272 – 5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luis E. Román  
Patent Examiner  
Art Unit 2836

LR/031607

*Stephen W. Jackson*  
3-19-07